nternational Application No PCT/US 01/41818

A. CLASSIFICATION OF SUBJECT MATTER
IPC 7 C07H19/10 C07H19/20 C07H19/207 A61K31/7072 A61K31/7076 A61P7/02

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

1

Minimum documentation searched (classification system followed by classification symbols)

A61P CO7H IPC 7 A61K

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal, WPI Data, CHEM ABS Data

| Category ° | Citation of document, with indication, where appropriate, of the relevant passages | Relevant to claim No |
|------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|
| X | H. PELICANO ET AL.: "Study of the substrate-binding properties of bovine liver adenosine kinase and inhibition by fluorescent nucleoside analogues" EUR. J. BIOCHEM., vol. 248, 1997, pages 930-937, XP008000886 abstract | 16,17 |
| X / | M. SEKINE ET AL.: "New type of chemical oxidative phosphorylation: activation of phosphonate function by use of triisopropylbenzenesulfonyl chloride" TETRAHEDRON LETTERS, 1979, pages 1145-1148, XP002191230 compounds 2 and 3 | 16,17 |

| Y Further documents are listed in the continuation of box C. | Patent family members are listed in annex. |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Special categories of cited documents: A' document defining the general state of the art which is not considered to be of particular relevance E' earlier document but published on or after the international filing date L' document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified) O' document referring to an oral disclosure, use, exhibition or other means P' document published prior to the international filing date but later than the priority date claimed | 'T' later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention 'X' document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone 'Y' document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art. '&' document member of the same patent family |
| Date of the actual completion of the international search | Date of mailing of the international search report |
| 25 February 2002 | 11/03/2002 |
| Name and mailing address of the ISA | Authorized officer |
| European Patent Office, P.B. 5818 Patentlaan 2 NL - 2280 HV Rijswijk Tel. (+31-70) 340-2040, Tx. 31 651 epo nl, Fax: (+31-70) 340-3016 | de Nooy, A |

nternational Application No PCT/US 01/41818

| ĺ | C.(Co | ntinua | ntion) DOCUMENTS CONSIDERED TO BE RELEVANT | |
|------------|-------|--------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------|
| | Categ | ory ° | Citation of document, with indication, where appropriate, of the relevant passages | Relevant to claim No. |
| V 3 | X | | J.P. RICHARD, P.A. FREY: "Stereochemical course of thiophosphoryl group transfer catalyzed by adenylate kinase" J. AM. CHEM. SOC., vol. 100, 1978, pages 7757-7758, XP002191231 compounds 1,3,5 | 16,17 |
| DL | х | | ZATORSKI A ET AL: "CHEMICAL SYNTHESIS OF BENZAMIDE ADENINE DINUCLEOTIDE: INHIBITION OF INOSINE MONOPHOSPHATE DEHYDROGENASE (TYPES I AND II)" JOURNAL OF MEDICINAL CHEMISTRY, AMERICAN CHEMICAL SOCIETY. WASHINGTON, US, vol. 39, 1996, pages 2422-2426, XP002073881 ISSN: 0022-2623 compounds 12,13 | 16,17 |
| Df | X | | M.L. METZKER ET AL.: "Termination of DNA synthesis by novel 3'-modified-deoxyribonucleoside 5'-triphosphates" NUCLEIC ACIDS RESEARCH, vol. 22, 1994, pages 4259-4267, XP002191232 figure 2 | 16 |
| P6 | X | | P.L. MARTIN ET AL.: "Structure-activity studies of analogs of beta,gamma-methylene-ATP at P2x-purinoceptors in the rabbit ear central artery" DRUG DEVELOPMENT RESEARCH, vol. 36, 1995, pages 153-165, XP008000885 figure 1 | 16 |
| D7 | X | | A. HAMPTON ET AL.: "Design of substrate-site-directed inhibitors of adenylate kinase and hexokinase." J. MED. CHEM., vol. 19, 1976, pages 1371-1377, XP002191233 compounds 4a-f | 16 |
| DS | X | | T. HIRATSUKA: "Affinity labeling of the myosin ATPase with ribose-modified fluorescent nucleotides and vanadate" J. BIOCHEM., vol. 96, 1984, pages 147-154, XP001063935 abstract | 16 |
| | А | | WO 89 04321 A (WORCESTER FOUND EX BIOLOGY) 18 May 1989 (1989-05-18) the whole document | 1,17 |
| 1 | | | -/ | |

nternational Application No
PCT/US 01/41818

| (Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT | |
|--------------------------------------------------------------------------------------------------------------------------|-----------------------|
| Citation of document, with indication, where appropriate, of the relevant passages | Relevant to claim No. |
| GB 1 407 903 A (ICI LTD) 1 October 1975 (1975-10-01) the whole document | 1,16 |
| US 5 721 219 A (KINDON NICHOLAS D ET AL) 24 February 1998 (1998-02-24) the whole document | 1,16 |
| US 4 621 076 A (KUZUYA FUMIO ET AL) 4 November 1986 (1986-11-04) the whole document | 1,16 |
| WO 99 61012 A (BOUCHER RICHARD C ;INSPIRE PHARMACEUTICALS INC (US); STUTTS MONROE) 2 December 1999 (1999-12-02) abstract | 17 com (|
| | |
| | |
| | |
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..ormation on patent family members

nternational Application No PCT/US 01/41818

| . – | tent document in search report | | Publication date | | Patent family member(s) | Publication date |
|-----|-----------------------------------|---------|------------------|----------|--------------------------|--------------------------|
| WO | 8904321 | Α | 18-05-1989 | WO | 8904321 A1 | 18-05-1989 |
| | | | | US | 5049550 A | 17-09-1991 |
| GB | 1407903 | Α | 01-10-1975 | AU | 474996 B | 05-08-1976 |
| | | | | AU | 6611474 A | 28-08-1975 |
| | | | | DE | 2412981 A1 | 26-09-1974 |
| | | | | FR | 2222093 A1 | 18-10-1974 |
| | | | | JP | 50024291 A | 15-03-1975 |
| | | | | ZA | 7401229 A | 29-01-1975 |
| US | 5721219 | Α | 24-02-1998 | AT | 159950 T | 15-11-1997 |
| | | | | AU | 679721 B2 | 10-07-1997 |
| | | | | AU | 5977094 A | 29-08-1994 |
| | | | | CA | 2155673 A1 | 18-08-1994 |
| | | | | CN | 1119869 A | • |
| | | | | CZ | 9502032 A3 | 13-12-1995 |
| | | | | DE | 69406649 D1 | 11-12-1997 |
| | | | | DE DK | 69406649 T2 683789 T3 | 05-03-1998 |
| | | | | EP | 063789 A1 | 09-02-1998 |
| | | | | ES | 2108425 T3 | 29-11-1995 16-12-1997 |
| | | | | FI | 953794 A | 10-12-1997 |
| | | | | MO | 9418216 A1 | 18-08-1995 |
| | | | | GR | 3025995 T3 | 30-04-1998 |
| | | | | HK | 1002936 A1 | 25-09-1998 |
| | | | | HU | 210812 B3 | 28-08-1995 |
| | | | | HU | 72464 A2 | 29-04-1996 |
| | | | | IL | 108602 A | 22-12-1999 |
| | | | | JΡ | 3083156 B2 | 04-09-2000 |
| | | | | JΡ | 8506335 T | 09-07-1996 |
| | | | | NO | 953126 A | 28-09-1995 |
| | | | | NZ | 261159 A | 24-06-1997 |
| | | | | PL | 310160 A1 | 27-11-1995 |
| | | | | RU | 2136693 C1 | 10-09-1999 |
| | | | | SG | 47943 A1 | 17-04-1998 |
| | | | • | SK | 99495 A3 | 07-02-1996 |
| | | | | US | 5955447 A | 21-09-1999 |
| | | | | ZA | 9400854 A | 24-08-1994 |
| บร | 4621076 | | 04-11-1986 | JP | 1366365 C | 26-02 - 1987 |
| | | | | JP | 59073524 A | 25-04-1984 |
| | | | | JP | 61032288 B | 25-07-1986 |
| WO | 9961012 | Α | 02-12-1999 | AU | 4083999 A | 13-12-1999 |
| | | | | CN | 1301168 T | 27-06-2001 |
| | | | | EΡ | 1087777 A2 | 04-04-2001 |
| | | | | WO | 9961012 A2 | 02-12-1999 |
| | | | | US | 6323187 B1 | 27-11-2001 |